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"In alkaline solutions, by ordinary treatment, no saponification takes place, after long boiling. The wax retains a little alkali after it has been washed in water, and the compound is to a small extent soluble in water, but has not the characters of soap. This alkaline wax will absorb a considerable quantity of an alkaline solution, in which it has been boiled; washing in water removes the excess of alkali, no definite compound being formed.

"When distilled from a nearly closed vessel, it leaves 0.44 per cent of carbon and ash, the latter amounting to .10 only.

"This wax can be supplied, should a want exist commercially, at a price intermediate between that of tallow and the ordinary wax. The only application at present known in which it exhibits useful properties is in forming a basis for a preparation used in waxing furniture and polished wood-work."

Mr. J. H. Abbot exhibited profiles of two routes for the Pacific Railroad, drawn by order of government; also profiles of the highest grades of all the working railroads of the United States. He also exhibited a mineral from a digging in California, taken twenty feet below the surface. It was a remarkably pure specimen of *hydrate of alumina*, with a minute quantity of *hydrate of silica*.

Mr. T. S. Hunt made a communication on the chemical law of equivalent volumes. He showed that the law applies to all solid bodies that are homœomorphous.

Dr. Durkee exhibited under the microscope the circulation of the contents of the cell of *Chara*.

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**Four hundred and fourteenth meeting.**

May 8, 1855. — **MONTHLY MEETING.**

The **PRESIDENT** in the chair.

Professor Agassiz stated that, since the preceding meeting, he had received one hundred and fifty specimens of one and the same species of coral, *Mussa angulosa*, Oken, the examination of which had satisfied him of the truth of his observations at the previous meeting, that many of the species described by authors are but immature specimens of species

passing under other names. Dr. A. A. Gould, who had examined the specimens, confirmed Mr. Agassiz's statement.

Dr. C. T. Jackson read the following extracts from a letter of M. L. Elie de Beaumont to himself, dated Paris, March 23d, 1855.

" You will see in the *Comptes Rendus*, that M. Gaston Planté has discovered at Meudon, near Paris, the remains of a gigantic bird, which is nearly as large as those which left their foot-prints in the new red sandstone (*Gres bigarrés*) on the borders of Connecticut River. This unexpected discovery will perhaps excite an interest among American geologists, inasmuch as it will diminish the incredulity with which many persons have opposed, during a long time, (and erroneously as I think,) the interesting discovery of Ornithichnites. . . . .

" We have established in Paris a *Meteorological Society* on a plan analogous to that of the Geological Society, and shall seek to bring together and publish and compare the meteorological observations made in all countries of the world; and shall be very happy to have collaborators in America, and to exchange publications with the Scientific Societies of Boston."

Professor Agassiz said that he was inclined to doubt whether all the so-called footprints of birds in the Connecticut River sandstone, were in reality produced by birds. Possibly they may have been made by animals of a type not now existing, in their organization coming between reptiles and birds. He was inclined to this opinion, from having noticed that in many of the tracks the impression of the so-called hind toe is rounded off, without any trace of the imprint of a nail, giving it much more the appearance of a heel-mark. Among the impressions, that of a so-called tarsus is apparent, and it is an unusual circumstance for birds to support themselves upon this joint in walking; the only species in which this takes place being the Cypselus, or Swift.

Professor O. W. Holmes exhibited a new microscope by Nchet, constructed upon a very small and compact scale, and yet available for working purposes, the highest power being about six hundred diameters.

Mr. G. P. Bond stated that he had found that the horizontality of the axis of the Great Equatorial at Cambridge is subject to a regular disturbance, its position going through a succession of changes almost uniform every year. This he ascribed to the unequal action of temperature upon the two supporting pillars. The western pier rises from March to September, and is depressed during the remainder of the year. Mr. Bond exhibited a diagram, showing by a series of curves the rate of elevation and depression through different months, for the past five years. The amount of departure from a horizontal position is  $\frac{1}{1000}$  of an inch in all.

Mr. Bond also said that he had been making some investigations to ascertain whether the attraction of the moon has any effect on the motion of a pendulum, and consequently upon the rate of a clock. He had found this last to be changed to the amount of  $\frac{3}{1000}$  of a second daily. At the equator the moon's attraction changes the weight of a body only  $\frac{1}{700000}$  of the whole; yet this force is sufficient to produce the vast phenomena of the tides.

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**Four hundred and fifteenth meeting.**

**May 29, 1855. — ANNUAL MEETING.**

The **PRESIDENT** in the chair.

The Treasurer presented his report for the year, which was certified by the Auditing Committee.

The Committee on the Library reported, and their report was accepted.

Professor Agassiz referred to the allusion in the Report to the Smithsonian Institution, and expressed in strong language his sense of the indebtedness of the scientific world to that Institution for its enlightened efforts to diffuse knowledge, particularly as a medium of exchange of publications. In conclusion, he moved that the thanks of the Academy be presented to the Smithsonian Institution, for its efficient agency in effecting for the Academy its exchanges with foreign